

SUPPLEMENT.

The Mining Journal,

RAILWAY AND COMMERCIAL GAZETTE:

FORMING A COMPLETE RECORD OF THE PROCEEDINGS OF ALL PUBLIC COMPANIES.

No. 1115.—VOL. XXVII.]

LONDON, SATURDAY, JANUARY 3, 1857.

[WITH JOURNAL] STAMPED . . . SIXPENCE.
UNSTAMPED . . . FIVEPENCE.

THE PROGRESS OF MINING IN 1856.

By J. Y. WATSON, F.G.S.

BEING THE THIRTEENTH ANNUAL REVIEW.

The most exciting part of the year 1856 has been towards its close. The great and sudden rise in copper, late in Nov., and again early in Dec., followed, as it was, by a considerable advance in the standard, gave new life to mining, and rendered it very difficult to procure shares in good dividend mines, a thing almost unprecedented in the market. The influence which this rise in copper must have upon mining; the great increase in the profits of the old mines which it will cause, and the number of fresh mines it will bring into the dividend list, are matters we shall treat upon in their proper place—that is, in taking a prospective view of the future.

At this time last year mining was highly prosperous—indeed, 1855 had been one of the most important in the annals of mining, caused, as we then described it, by the prosperous state of the mines, the remunerative price of metals, the buoyancy of business transactions, and the great advance which had taken place in the prices of shares; and if, in looking back at 1856, we find that, soon after our last review, things changed for the worse; if the fall in the standard disheartened the miner, and reduced his profits; whilst the pressure in the money market, and the high rates of interest obtained for money in general pursuits, made those who had capital cautious in laying it out, and restricted their operations in speculative purchases, we may safely say that the results of the whole year are favourable, especially if we look at the amount of dividends declared, and the present state of the mines; whilst the rise in copper, before adverted to, points out for mining a brilliant course for the future.

In a review, professing to be strictly one of mining affairs, it may seem out of place to refer to other matters, yet we cannot help remarking, that the serious losses occasioned by such failures as the British Bank, had their effect on all speculations for a time, and especially on mining. It is a singular thing that, a few months before the bank stopped, I advised a shareholder to sell his shares and invest the proceeds in dividend mines; this he would not do; because he had "no confidence in mining accounts." If he reads this, what will he now think of banking accounts? What will he think of men, considered of high standing (!), who could publish such a flourishing statement as that given by the bank shortly before it stopped in hopeless insolvency, and upon that false and scandalous statement invite the public to take shares! Mining accounts are so strictly audited every two months, that the true position of a mine cannot be concealed; and it is the fault of a party investing if he allows himself to be deceived.

For Copper, throughout the past twelve months the demand has been unprecedented, and consequently the price was maintained at the rates ruling at the end of the past year, for the first six months of 1856, when, to the astonishment of both buyers and sellers, an unlooked-for and unheard-of drop of 2d. per lb. was declared by the leading houses, and the triad who rule the trade had doubtless reasons sufficiently satisfactory to themselves for making so sudden and sweeping a change; but its unreasonableness was at once apparent, in the fact of the houses who made the reduction refusing to execute orders at their own published rates, and offering to do so at the price which should be ruling at the time of the delivery of the copper, and it is more than probable that many who so gave out their orders have had to pay 1s. 1d. or 1s. 2d., instead of the nominal 1s. per lb., since the smelters were compelled to make two advances within a fortnight, of 1d. each time, thus returning to the old price of 1s. 2d., and thereby admitting that the facts of the trade had really nothing whatever to do with the drop from 1s. 2d. to 1s., which consequently must be looked upon as having been most unjust to the mines, as well as to many of the buyers of copper.† We may now, we hope, congratulate the mining interest on the good fruits which may be looked for from the late rise. The defeat of the monopolists has been complete, and we hope they will not again subject themselves to be considered as conducting one of the most important branches of trade in the country in a most unbusiness-like manner. We may further congratulate ourselves on the admitted good demand for copper, the rumour being that all the manufacturers' order-books are full for two months, which, coupled with the fact of the general stock of copper being greatly reduced, the greatly increased consumption in railways and in shipping, not to name telegraph and other new but numerous consumers, must cheer the hearts of all copper miners, as profits steady and large must be the result in the coming year.

As to Tin, this important article was never known to be in a more satisfactory state for the mining interest. Throughout the past year the demand has been most active, and seeing that there is comparatively no stock (the smelters being from hand to mouth), that the tin-plate makers can scarcely meet the demands upon them, and that the speculators in the late sale by the Dutch Government have realised large profits, whereby they will be tempted again to try their luck, it may fairly be concluded that high prices will rule for a long time.

In regard to Lead, we regret we cannot, looking to the future, speak so favourably as we have done of copper and tin, though there is nothing particular to make the miner despond. The high prices which have been obtained for the past three or four years have rather spoiled us, for we cannot now bring ourselves to think 20/- a good price, because 25/- ruled for a time, notwithstanding that four or five years ago 15/- was the general price, and somewhere about the rate when East Rose made its large profits. At the end of 1855, we looked for good prices during 1856, and for the greater part of the time such was the fact, but two things occurred to damp the market: one was, a less demand than had been expected from Russia; the other, the production of Spanish and German mines, stimulated by the high price, increased and competed with us at all points. We cannot, of course, pretend to say what will be the price during 1857, but we may venture to prognosticate that 21/- per ton will be the minimum rate, seeing that at this rate a diminished production will probably be the result, both at home and abroad, and then we may look for what we have

so often seen, the supply barely equal to the demand, and the smelters scrambling for ore, followed by higher prices. From all this, we gather that there is nothing "looming in the future" seriously detrimental to lead mines, but the probability for a time, at least, of moderate profits, which must be met by a revision of costs.

The mineral statistics of the United Kingdom, by Mr. Hunt, Keeper of Mining Records, are generally made up about June; and from the last made up we gather that in 1855 the number of tons of copper ores sold in Cornwall, and the produce of Cornish and Devon mines, was 195,193 tons, yielding 12,578 tons 11 cwt. 23 lbs. copper, realising 1,263,739. 6s., being a considerable increase over the previous year. In Wales, the ores sold, being the produce of Irish, Welsh, and foreign mines, 43,903 tons, yielding 5926 tons of copper, and 654,468. 11s. in money. Copper ores sold by private contract realised 949,000/-, making a grand total of 2,867,207. 17s. received for copper ores sold in England in 1855. The average standard of the Cornish sales was 143. 2s., produce 63%, and the average price per ton paid to the miner 6s. 8d. 6d. per ton.

From Jan. 1 to Sept. 30, 1856, the copper ores sold in Cornwall were 157,843 tons, yielding 10,246 tons of copper, and 925,245. 11s. 6d. in money. The last quarter ending Sept. 30 was 4637 tons of ore less than the previous quarter.

The quantity of lead ores raised in the United Kingdom in 1855 was 92,330 tons, yielding 73,201 tons of lead, 561,906 ozs. of silver, and realising in money for lead ores 1,811,971. 1d., and silver, at 5s. the ounce, 140,476/-, showing a very considerable increase over the previous year. Of the above, Cornwall yielded 8962 tons of ore, equal to 5882 tons of lead, and 211,348 ozs. of silver; Devonshire 4035 tons of ore, equal to 2292 tons of lead, and 89,908 ozs. of silver. Durham and Northumberland 22,107 tons of ore, equal to 16,309 tons of lead, and 75,435 ozs. of silver. Flintshire yielded 6273 tons of lead ore, equal to 4926 tons of lead, and 25,823 ozs. of silver. Cardiganshire 7043 tons of ore, 5014 tons of lead, and 28,079 ozs. of silver.

The tin ores raised in Cornwall and Devon during the same period were 8947 tons (of this Devon produced 320 tons), realising 608,396. The produce in metal was about 6000 tons, which, at 12d. per ton, would yield 720,000.

The iron ore raised in the United Kingdom was 9,553,741 tons—pig-iron, 3,218,154 tons, at 4s. per ton, realising 13,516,266.

If we take the value of copper ores sold in 1855 at 2,867,207. 17s.; lead and silver, 1,452,447. 1s.; tin ores, 608,396/-; it gives us a total of 4,928,030. 17s., the value of one year's mineral produce. In addition to this, there is the iron mentioned above, 13,516,266/-; coals raised from 273 collieries, 15,431,400 tons.

In giving the result of British mining, as shown in the dividends of profits paid to the shareholders, the first column gives the amount of capital originally subscribed per share; the second column, the present market value. I also give the amount of dividends paid in 1856, so that the increase or decrease of profits on each mine may be seen at once.

BRITISH MINES.

Name of Mine.	Amount paid.	Market value.	Dividend per share.	Total in 1856.	Dividends in 1855.	Increase or Decrease.	Dec.
Alfred Consols.	£31	£31	£1 14 0	£38,074	£38,888	- £2816	£
Bedford United	2%	8	0 12 6	2,500	5,800	- —	3,300
Bottalack	182	170	29 0	6,800	8,000	- —	2,200
Condurrow	20	160	15 0	3,840	2,948	+ 1,892	1792
Devon Gt. Con.	1	430	58 0	5,932	5,734	- 2048	—
Fowey Consols.	40	—	7 10 0	3,705	1,976	+ 1,729	—
Great Work	100	—	82 10 0	3,867 1/2	—	- 3,867 1/2	—
Drake Walls	2	1 1/2	0 2 6	1,600	—	- 1,600	—
Kitty (St. Ag.)	4 1/2	7	0 3 0	750	—	- 750	—
Levant	2%	100	8 0	1,280	960	+ 320	—
Mary Ann	5	42	7 10 0	7,680	1,280	+ 6400	—
North Bassett	—	36	4 9 6	26,850	21,750	+ 5,100	—
Providence	20	71	15 0	10,080	6,300	+ 3,780	—
Par Consols	1 1/2	22	3 0 0	19,200	7,680	+ 11,520	—
Phoenix	30	—	37 10 0	7,500	—	- 7,500	—
South Frances	140	360	53 0	26,288	19,964	+ 6,324	—
South Bassett	5 1/2	270	61 0	31,232	35,200	- 3,968	—
South Caradon	2 1/2	350	48 0	12,288	12,288	- —	3,328
Trelawny	1 1/2	—	0 10 0	4,500	6,075	- 1,575	—
Tinctor	9	4	0 10 0	3,000	—	- 3,000	—
Trewetha	3 1/2	3 1/2	0 12 0	2,457 1/2	819 1/2	+ 1,638 7/8	—
United	40	150	2 0 0	500	3,600	- 2,800	—
Tamar Consols	4 1/2	—	0 2 6	12,00	—	- 12,00	—
Wheat Buller	5	250	90 0	23,040	33,280	- 10,240	—
Tretol	—	124	0 5 0	1,000	—	- 1,000	—
Seton	107	140	14 10 0	2,871	1,387	+ 1,484	—
Wheat Margaret	79	40	8 15 0	3,920	1,907	+ 1,013	—
West Providence	5	14	2 15 0	2,816	1,792	+ 1024	—
Wheat Lovell	33	18	1 0 0	430	—	- 430	—
Mendip Hills	8 1/2	—	0 5 0	1,250	—	- 1,250	—
Wheat Owles	70	—	21 10 0	1,720	920	+ 800	—
Wh. Exmouth	4 1/2	—	0 18 0	5,130	2,565	+ 2,565	—
Wh. Clifford	4 1/2	550	16 0	4,000	1,345	+ 2,655	—
Wh. Kitty	5 1/2	15	2 5 0	2,274	1,024	+ 1,250	—
Wh. Darlington	—	—	0 17 0	870	—	- 870	—
Spearman Moor	23	—	0 15 0	210	840	- 630	—
Wheat Wrey	70	—	21 10 0	1,720	920	+ 800	—
Brightside	50	—	3 0 0	300	100	+ 200	—
Carnforth	4 1/2	5	0 6 0	614	923	- 307	—
Peak United	7 1/2	—	0 10 0	250	500	- 250	—
Dolcoath	257	205	28 10 0	5,010 1/2	1,074	+ 4,927 1/2	—
Eyam	3 1/2	—	3 0 0	4,200	2,100	+ 2,100	—
East Pool	—	320	7 10 0	3,200	1,280	+ 1,920	—
West Bassett	1 1/2	32	3 19 0	3,8350	2,000	+ 2,8350	—
Rosewarne Ud.	12	45	13 18 0	6,912	7,936	- 1,024	—
Hington Down	3%	4	0 12 0	3,600	8250	- 4,650	—
Ding Dong	32	34	10 10 0	7,056	—	- 7,056	—
Sorridge Cons.	68	1 1/2	0 7 6	4,500	—	- 4,500	—
Nether Hearth	24	—	0 1 0	320	320	- —	—
Wh. Fortescue	nill	—	0 1 6	375	208 1/2	+ 166 1/2	—
Boosean	20%	350	34 0 0	13,600	7,000	+ 6,600	—
Dervent Mines	30 1/2	—	12 0 0	2,880	—	- 2,880	—
Polderry	15	—	2 0 0	2,800	—	- 2,800	—
Bachledion	11 1/2	—	0 7 0	875	—	- 875	—

WELSH MINES.

Brynfod Hall	20	—	13 0 0	1,300	—	—	—

<tbl_r cells="8" ix="5" maxcspan="1" maxrspan="1

and tin, realising 2167. 5s. 6d., and divided 26,850*l.* The mine is looking well, and with such rich ores greater profits are expected.

WEST BASSET has sold copper ores to the value of 49,986*l.* 6s. 7d.—viz., 1644 tons, and divided 23,850*l.* The reserves are still large, and the mine a good investment.

SOUTH FRANCES has sold this year 6463 tons of copper ores, yielding 48,263*l.* 11s. 6d., and has divided 26,288*l.* We gave a full description of this mine last year, and what we stated has been fully borne out, and the price of shares has remained steady all the year.

BULLER has sold during the year 7482 tons, realising 39,761*l.* 12s. 6d., and divided 23,040*l.* The prospects here are not very brilliant, and the dividends will probably be less in 1857.

PARK CONSOLS has divided this year 19,200*l.*, being an increase of 11,520*l.* over last year, and from the large returns of tin and copper the probability is that a further increase will take place.

FOWEY CONSOLS has sold this year 5307 tons of copper ore, realising 35,923*l.* 19s. 6d., and divided 3705*l.* The returns are increasing, and larger dividends may be looked for.

CONDURROW has returned 1941 tons of copper, besides large parcels of tin, realising 12,012*l.* 8s. 6d., and has divided 3840*l.* The returns of the mine are increasing, and so will dividends.

DOLCOATH, for an old mine, has done wonders this year, selling 604 tons of copper for 1967*l.* 14s. 6d., arsenic 237*l.*, and tin, 434 tons, 33,119*l.* 11s. 10d., and the dividends have been 510*l.* 10s. The mine is looking very rich, and probably larger profits will be declared this year.

CARN BREA has sold large quantities of copper this year, but not declared any dividends: 6632 tons realised 27,286*l.* 13s. 6d.

GREAT SOUTH TOLGUS has sold this year 767 tons of copper ores realising 5247*l.* 10s. During this time a large outlay has been made for machinery, and, in consequence of erecting it, the returns have been small. They will in 1857 more than double their returns, and commence paying dividends about April next.

SOUTH TOLGUS has returned 1867 tons, realising 14,991*l.* 12s. 6d. Although no dividends have been paid this year, this mine has been lately working to a profit of 500*l.* to 700*l.* per month, and will begin the year with good dividends.

OLD TOLGUS UNITED.—In May last, a company was formed for working this mine, with a paid up capital of 4000*l.*, and in eight months an engine was erected, and the shaft sunk 34 fathoms from surface. The lode at the engine-shaft is 4*1*/₂ feet wide, which is being sunk on its course, and orey throughout. A level will be at once extended east and west on the course of the lode. The great cross-course which traverses South Tolgus, Great South Tolgus, and other productive mines up to the Buller and Bassett district, passes through the Old Tolgus United about 100 fms. west of the shaft, and practical miners have a high opinion of Old Tolgus.

EAST TOLGUS is one of the good progressive mines which may come out in 1857.

TINCROFT has sold 3331 tons of copper, realising 13,895*l.* 15s. 6d., besides a good quantity of tin, and has divided 4500*l.*, with a good prospect of paying much better this year.

EAST POOL has done well this year, having sold 2821 tons of copper, besides tin, realising 16,544*l.* 9s., and divided 3200*l.*

WHEAL CLIFFORD has sold this year 3257 tons of copper ores, realising 22,386*l.* 6d., and divided 4000*l.* This is a copper mine of considerable promise, situated in Gwennap. There are workings on three lodes—the north, south, and Hot lodes—east from the United Mines, which bound Wheal Clifford sett on the west. The last dividend declared was 6*l.* per 250*l.* share, on Dec. 17, and increasing the balance in hand from 73*l.* to 30*l.* The previous two-monthly dividend, paid Oct. 22, was 5*l.* per share. On the north lode, the engine-shaft is sunk to nearly the 190 fm. level, where the lode, 3*1*/₂ ft. wide, is unproductive, but in a better channel of ground than before. The 170 has been driven west 81 fms., the last 30 fms. through a course of ore worth from 80*l.* to 100*l.* per fm.; the lode in the head yields 12 tons per fm. The 180 west is unproductive, having about 12 fms. to get under the ore ground in the 170. A winze sunk 8 fms. below the 160, about 8 fms. before the 170 end, produced 6 tons per fm. The 160 is driven 20 fms. west of this winze, through a large, strong lode, looking well for making ore at deeper levels. The lode in the end is 4*1*/₂ ft. wide, producing stones of ore. The stopes and pitches are looking very well. On the Hot lode east from United Mines, the 208 is driven to the boundary of Wheal Clifford sett. This lode has been producing 20 tons per fm., but the Clifford adventurers will require time to avail themselves of it. On the south lode very little is doing; the only tuck-work is in the 180 east, where the lode is unproductive. The dividends of the mine will, no doubt, be eventually increased above the present amount, but this will not take place for some months, on account of the cost of new machinery.

THE UNITED MINES have returned copper ores this year 9395 tons, realising 50,772*l.* 17s. 6d., and have divided 300*l.* only, having had a large sum of money to pay towards the purchase of the Great Consols; of this, the last instalment, we believe of 5000*l.*, has just been paid. The mine is looking well, with a rich course of ore gone over in one level, for 90 fms. in length, and it is probable that the mine in 1857 will increase its dividends, and have a greater rise than any other mine in the dividend list.

CILJAH AND WENTWORTH is progressing the way which has had to be followed by nearly all the leading mines of this district—exercising the patience of the adventurers. The steady perseverance, however, with which the ground is being explored, will, as may reasonably be expected, be well rewarded.

BELL AND LANCAETH (Gwennap).—A promising lode has recently been met with in the Lanarth Mine, in driving the deep adit, containing some very rich grey ore, and running parallel with the rich courses of ore met with in the old Pensfordshire mine, renders it an important feature. It is divided into 508 shares which are principally held in the county.

BUHLER AND BASSET UNITED two shafts are being sunk on the course of distinct lodes, which form a junction in depth, and east towards the Buhler cross-course. One shaft is down 48 fms., lode 3 feet wide, and yielding stones of ore. In another month a level will be extended east and west. The other shaft is sunk 34 to 35 fms.; lode 4*1*/₂ feet wide in the evan, and underlying 2 feet in the fathom, composed of gossan, quartz, and iron.

WHEAL UNY (Redruth).—A well laid-out mine, and will, in all probability meet its cost for the ensuing year; the main hopes are, however, from the copper lodes, which embrace most of the Carn Brea lodes. A cross-cut is being driven at the 30 fathom level towards them, which will shortly intersect the nearest, which is a very important point.

NORTH BULLEH (Redruth).—A cross-cut is being driven from Wheal Uny, at the 80 fm. level, through this sett, and is now approaching a lode, and from the congenial nature of the ground, and depth, something good may be anticipated. In the engine-shaft is a very promising lode, yielding some very good yellow ore.

COOK'S KITCHEN.—The workings of this mine are now approaching the depth at which the present riches in the adjoining mine, Dolcoath, began to manifest themselves; and the character of the lode being identical in both mines, Cook's Kitchen may be looked forward to as a dividend mine at no distant period.

WEST STRAY PARK (adjoining the old Stray Park and Camborne Vean).—The engine-shaft is sunk to the 55, and cross-cuts have been driven south and intersected a lode which in the 30 and 40 yielded large quantities of ore, and in these levels there is now standing upwards of 7000*l.* worth of copper ore. The same lode has recently been cut in the 55, and by driving about 10 fms. east, the ore ground will be reached, and should it prove equal to the level above, it will at once place the mine in a position to make profit.

AT WHEAL CUPID (Redruth) about 14,000*l.* has now been expended, principally in the eastern part of the sett, which has not hitherto equalled expectation. In the western part another steam-engine was erected about two years ago, near the junction of the killas and granite, and the shaft is now down 45 fms. below adit, with a good lode in the bottom orey throughout, and with an appearance of being near a course of ore; and during this year good quantities we hope will be raised.

NORTH GRAMBLER is an important piece of ground; parallel to the rich ore ground of Grambler and St. Aubyn. A shaft has been sunk to a depth of 50 fms., and driving has been commenced east and west upon a lode averaging from 2*1*/₂ to 3*1*/₂ ft. of good as good a character as any young man in the country; there are three other lodes within a short distance which will be cross-cut during the year.

WEST CUPID is very favourably spoken of; it is to the north of Penzance and west of Cupid. In Garland's shaft, sinking on Ommaney's lode, under the adit, the lode is yielding tin enough to pay for sinking. From Williams' shaft a cross-cut has been driven north to Mackean's lode, and when cut, worth 15*l.* to 20*l.* per fm. The cross-cut will be extended still further north to cut Cupid lode.

SOUTH CROFTY, the other half of the old East Crofty, is looking well and likely to improve.

NORTH FRANCES has progressed very favourably during the year, and from its situation, adjoining South Carn Brea and north of West Bassett, may take an important position before long. The lodes are opening out well.

AT BASSET GRAZE UNITED considerable progress has been made during the past year. The lode from which the jack has been raised continues productive, and this ore contributes materially towards the cost of the mine. During the past month this lode, which is one of the Great Consols lodes (the sets being adjoining), has been cut at 37 fathoms below adit; at this point every vestige of jack has disappeared. The lode, inclusive of two or three branches which are making into it, is 10 feet wide, 5 feet being compact pease and mudi; at a point about 30 fathoms the lode forms a junction with the principal lode of Wheal Clifford. Further operations at this point are, however, for the present suspended, whilst a level from the engine-shaft is driven towards it. This level, which is expected to unwater the western ground, has to be carried forward about 12 fathoms, to cut a large cross-course which traverses the sett from north-east to south-west, and intersects all the lodes. Meanwhile, a shaft is being sunk upon the cross-course to this level. The lode is producing good stones of copper ore, going west towards the cross-course, and expectations are entertained of a discovery at that point. The mine is out of debt, has a beautiful engine, and is otherwise well appointed.

SOUTH CARN BREA is in 2000 shares, but will probably be subdivided at the next account, in January, into 6000. It is under the same management as North Bassett, and adjoins that sett immediately on the north; direct west is North Frances. The mine is situated in the midst of the richest mines in the Bassett district, and great results are with much reason expected from it. The shares have gradually increased in value from the commencement of the year, and the increase in price has been quite justified by the improved, and still improving, prospects of the mine. The sett is traversed by several lodes, one of which on which a flat-rod shaft from the engine is now being sunk, is from 12 to 18 feet wide, and there is now a course of rich ore in the shaft, averaging in width 1*1*/₂ to 2*1*/₂ ft. solid. This shaft is down about 7 fms. below the 48, and in the 48 west the lode is large, and promising also. A deep adit is being driven through the Carn Brea Hill to cut this lode at a deep level, about 120 fms. west of the flat-rod shaft, and as the lode will there be intersected, many fathoms deeper than it has been seen in the shaft, and it improves going west, and in depth. A few fathoms beyond this large lode, and south, is the rich lode of South Frances, which will also be intersected in the deep adit. The first of these lodes will be cut, probably, about May. Meanwhile, the mine is making good return from the flat-rod shaft and the 48 west. The ores are rich, and very like North Bassett's, the lodes having very lately become characterised by the appearance of those great features of richness which are peculiar to North Bassett—that is, the red oxide and green carbonate of copper.

WHEAL HABRETT, situated between Dolcoath and Condurrow, has considerably improved. The lode in the 50 is worth from 2 to 3 tons of copper ore per fathom; in the winze sinking below the 50, 2 tons per fm. In the 74 cross-cut they have cut into a lode 3*1*/₂ ft. wide, composed of pease, fluor-spars, mudi, and copper ore, of very good quality, but not having met with the south wall they cannot give

its real value, but Capt. T. Williams states it to be the most promising lode in the sett. This mine must, we think, assume a better position ere long.

NORTH WHEAL CROFTY forms a part of the former mine, East Wheal Crofty, which had been very rich, and given a profit of nearly 100,000*l.*; it was divided about two years since into two mines—North Wheal Crofty and South Wheal Crofty. North Wheal Crofty may be said to be the most important part of the former mine, as it contains a much larger extent of unexplored ground, and contributed more largely to the profits formerly divided. It is traversed by the lodes of East Pool, North Pool, North Roskar, and Wheal Seton, being bounded on the east by the two first-mentioned mines, on the west by North Roskar, and on the north and west by Wheal Seton, all of which mines have divided large profits. The large amount of unexplored ground in this mine forms the northern part of the sett, which is traversed by several lodes (amongst which is the North Pool lode), and on which very little has yet been done. Two or three levels are being opened on North Pool lode, in which the indications are good. There are several other points promising well, and looking at the locality, and the extent of unexplored ground, the prosecution of this mine is undoubtedly a very good speculation. The present party of adventurers purchased the mine at about the value of the materials, which are estimated to be worth from 4000*l.* to 5000*l.* The amount since expended over the returns is very small.

NORTH BULLER, to the west of North Bassett has the north lodes of that mine. The shaft is now sinking below the 60, the adventurers being desirous to get the shaft down to the 80, the point at which the junction of the north and south lodes is expected to take place. Should they be fortunate enough to meet with the granite, it is the opinion it will be equally as rich as its neighbours. The shares are held in few hands, and the adventurers are determined to carry the works out with vigour.

EAST BASSET, at present in 256 shares only, but about to be subdivided, is situated in the heart of the Bassett district, and adjoins, and is directly east of, North Bassett. It originally formed part of Wheal Bassett sett, and was divided from it about the same time as Copper Hill was divided from Buller. The whole of North Bassett lodes run through the sett, also one or two of the north lodes of Bassett, and two or more of the Copper Hill lodes underlie into it. In June, 1855, the price of shares was 70*l.*, since which they receded, in June last, to as low as 42*l.*, but from that time to the present they have been gradually creeping up, and we fully expect to find the mine one of the prizes of 1857.

WHEAL ARTHUR has sold this year 1530 tons of copper, realising 4615*l.* 2s. 4d., and 13 tons of tin, yielding 937*l.* 5s. 9d.

EAST ROSE is making very large returns of lead, but the cost of working is so enormous that heavy calls have been made upon the shareholders during the year.

CARGOLL has been very flat, but within the last few days discovery has been made which may affect its future prospects.

RICKARD'S WHEAL ROSE is a quiet, good speculation, progressing favourably, and chiefly in the hands of Cornishmen.

EAST GARRAS has gone on quietly, but not very brilliantly, during the year, though the prospects are good.

PENHALDAVARA.—In our last annual review we stated that the prospects of this mine were very good; and that, if the lode were cut as productive as anticipated, it would add another rich lead mine to the Truro district. Our opinions have been so far confirmed, by the lode having been lately intersected in the adit level, and pronounced by Capt. Pope, of Bassett, the agent, to be one of the finest, for the depth, he has ever seen in Cornwall. It is 15 ft. wide, and for the few fms. driven on it has yielded $\frac{1}{2}$ ton to 1 ton of rich silver-lead ore per fm. There is every prospect of this mine proving one of the prizes of 1857. There are only 512 shares, and we believe 15*l.* per share has been offered.

NORTH PENHALDAVARA adjoins Penhaldavara, and is on the same lode, showing equally favourable prospects. An adit level is being driven on the lode, with rapidly increasing backs, and the men have already broken some good stones of lead. We are informed that a small parcel of lead ore was sold from this adit. This mine is also under the able superintendence of Capt. Pope, of Bassett. There are 512 shares, and the price varying from 3*l.* to 5*l.*

SOUTH WHEAL ELLEN.—This was an old mine, resuming working at Midsummer, 1855, when a company was formed, in 256 shares, afterwards subdivided into 1204. The present company have worked the mine in a very spirited way; they have made calls amounting to 5*l.* 15s. 9d. per share, making 5928*l.* 10s. 6d., and sold 20*l.* from March to November last, more than 3000*l.*, worth copper ore, less dues 2849*l.*, which, added to the amount of calls, shows 8777*l.* has been expended on the mine since Midsummer, 1855. There is a 45-in. pumping engine on the mine, and a drawing-engine and crusher—machinery adequate to make large returns. The engine-shaft is sunk to a 30 fm. level below adit. The 30 west is driven 25 fms., the end yielding 2*1*/₂ tons per fm. The north and south lodes have come together, and a cross-cut is being driven from the end into the south lode; 3*1*/₂ feet have been driven through, opening a very productive and promising lode for a mass of ore. The two lodes are here believed to be from 7 to 8 ft. wide, as they are in a winze sunk from the 20, 3 fms. before the 30 end, and now down 9 fms. The lode in this winze produces 4 tons per fm., and in the bottom it is still looking better, 1 ft. wide of the lode producing ore of high produce. The stope east and west of winze yield 3 tons per fm.; the western stope has ore of the best quality. The 30 end will be hoisted to the winze in from five to six weeks, when a great and productive extent of ore ground will be available for stopping. Another winze, 11 fms. west of engine-shaft, has been hoisted to the 30; the lode is large, and 4*1*/₂ fms. of the sinking yielded 14 tons. Besides the perpendicular engine-shaft sunk by the former workers, intersecting the lode in the 30, the present company have sunk on the course of the lode from the 20 to the 30. The ground in the ends of this diagonal shaft will work at 8*l.* in the 20 fm. level west is at present suspended, but the 10 west is being driven into Bassett's land, in the western hill, where the lode is 6 feet wide, and very promising for ore, being more mineralised than before. There will be high backs to the lode, and a splendid gossan being seen in the shallow adit, this part of the mine is looked forward to with much confidence. In the eastern part of the mine the principal object is to get under the ore ground which the former miners have worked away in the adit for 120 fms. in length, the adit being in this part of the mine from 40 to 50 fms. deep. The present company have been a long time driving a 10 fathom level, to get under this ore ground; and in the last week there has been a great improvement in the end; the strata have changed, and a leader of ore has been cut in the 10 end, producing 1 ton per fm., and improving with further driving. The 10 end looking so encouraging, a winze has been set to sink below the adit, about 7 fms. before the end, and there is every probability that good results will very shortly be attained in this part of the mine. From the adit, for 120 fms. in length, the ore ground has been taken away by the old miners, in many places from 28 to 29 fms. above adit. The present company have pitches now working in the adit at 10*l.* in the 20. The 20 and 30 east are suspended until the 10 cuts into the ore ground; the only work doing in these points is a pitch 23 fms. east of engine-shaft, below the 20, down 8 fms., and producing about 3 tons per fm. A flat lode (under 4 fms. in) intersects the engine lode 3 fms. below the 20 at the pump-shaft, and is carried down by the engine lode. The flat lode produces rich ore; at the sale in November, 27 tons realised 10*l.* 18s. 6d. per ton. The last sale of ore, in November, realised 710*l.*; the next sale, in January, will exceed that amount, and afterwards, from the extent of ore ground laid open, the sales will considerably increase. After the next meeting, in January, it is expected the mine will about pay costs, and dividends are confidently looked for ward to in the course of 1857.

WHEAL ELLEN (St. Agnes).—In the former working this mine yielded very large profits from copper ores raised above the adit level, no trial having been made below that depth. An engine (24 in.) has been erected, and a shaft sunk 12 fms. below the adit, through a good lode

WHEAL TRELAWNY has divided 1040*t*. During the early part of the year the profits were small, but from the great improvement in the mine a great increase in the profits may now be looked for.

WHEAL WHEY has sold 1064 tons of lead, realising 18,661*l*., and divided 5529*t*. 12*s*. The mine bids fair to increase profits. The lode in the bottom level has lately been cut, and is yielding $\frac{1}{2}$ ton of lead per fm.

BUTTERDIL AND PENHAUGER are progressing, but there is little more to say on either, except that from the situation of them good results ought to ensue.

WHEAL VENTON.—A very heavy outlay has been incurred here for machinery, and the difficulty in getting funds from the shareholders militates much against the mine, which from its fine situation (dividend mines around it, with the same lodes) ought to be prosecuted with vigour, when a good mine might be met with.

HERDSFOOT has been steadily improving and increasing its returns during the year, which now leave a profit; and when the book is clear of debt, which will be in about three months, there will again be a prospect of dividends.

WHEAL ROBINS.—The lode to which we referred in our last Review has lately been cut in the 7*s*, and on driving east and west upon it shows a very promising appearance, and appears likely to repay the adventurers for their patience and perseverance.

BEDFORD UNITED has sold 2391 tons of copper, yielding 13,807*l*. 19*s*. 6*d*., and has divided 2225*t*.

EAST GUNNIS LAKE AND SOUTH BEDFORD has returned 617 tons of copper ore, yielding 2123*t*. 16*s*. 2*d*. This mine, we expected, would have done far better, and we hope for better results soon.

HINGSTON DOWN has returned 2303 tons of copper ore, yielding the sum of 14,239*t*. 10*s*. 8*d*., and has divided 12*s*. per share on 6000 shares.

GREAT BADDEHORN has sold 370 tons of lead, realising 4977*l*. 4*s*. 10*d*. This mine appears likely to become profitable this year.

DEVON KAPUNDA has been at work since 1852, and is now under the management of Mr. Richards, of Devon Great Consols, and the resident agent. The greatest depth reached is 50 fathoms. In the 3*s*, a fortnight ago, a lode was met with worth from 20*t*. to 25*t*. per fm., and appearances lead to the belief that a deposit of copper may soon repay the adventurers for their energy and perseverance.

DEVON BURRA BURRA is in Whitchurch, and contiguous to the granite range of Dartmoor. The sett is virgin ground, traversed by several cross-courses, and about 60 fms. west of Great Wheal Friendship cross-course the recent operations of the mine have been carried on. During this year a shaft has been sunk to the 40*f*, level driven north and south to intersect two east and west lodes, and which are nearly reached, the ground being favourable for mineral.

SORTHEDGE CONSOLS.—At this time last year the reserves were valued at 35,000*t*, and we stated then that various opinions were afloat as to whether the ore would hold in depth or prove a mere shallow deposit; and there can be no denying that the discoveries this year have not been equal to the sales, and that new ore ground must be laid open even to keep up the present returns much longer; and it is to be hoped an improvement will take place. During the year this mine has sold 1907 tons, realising 13,855*t*. 14*s*., and has divided 4500*t*.

WHEAL EMMA.—This mine has greatly disappointed expectation, and although a fair spec. result has shown there was never anything to justify the extravagant reports respecting it, and which got up the share to 20*t*. each. We have every confidence in Mr. Jehu Hitchins, who never concurred in those reports, and as he has now taken the management, we feel certain, for the future, everything at the mine will be not only fairly conducted, but fairly reported.

WHEAL SYDNEY (Plymouth) has been progressing very favourably this year, and may soon yield good profits.

NORTH ROBERT is looking well, yet it has not progressed so rapidly as we anticipated; we hope, however, that while it has been slow in arriving at a profitable state, it may be the more lasting when it does reach that desirable position. In the past year 1291 tons of copper ore have been sold for 8230*l*., against 590 tons for 4845*t*. 16*s*. 2*d*., showing the returns to have nearly doubled. The eastern mine has been making profits, but they have been swallowed up by the expenses of the western mine, which has not yet been sufficiently laid open to make returns. This part of the mine is now coming into a productive state, the 30*w* having passed through some good ore ground, and the winze sinking under this level is worth 3 tons of rich ore per fm. The 42 is coming up under this, is yielding fine stones of ore, and altogether very promising.

LADY BERTHA has sold this year 514 tons of copper ore, realising the sum of 2037*t*. 0*s*. 3*d*., and bids fair to do better. The mine is worked by a 32-ft. water-wheel. The engine-shaft is down 20 fms. below adit on the course of the lode, the underlie of which is about 14 inches in a fathom; the lode in the shaft is about 7 feet wide, composed of quartz, black heavy peach, fluor-spar, muriate, and yellow ore. The 20 west 7 fms.; in the end lode 1 ton per fm.

DEVON BULLER.—This mine has disappointed expectations so far, but the prospects are still looked upon as encouraging. Has sold this year 188 tons realising 1169*t*. 3*s*. 6*d*.

TAVY CONSOLS has been improving for some time past, and is now in condition to pay its own way, whilst any discovery will yield good profits.

BOTTLE HILL has become private property, and yields a profit of 150*t*. in the last three or four months.

SOUTH CUDDRIDGE MINE.—Operations were commenced on this mine in February of the year; since that time copper ores have been raised of about the value of 600*t*. It adjoins the South Crinnis Mines, and some of the lodes of that rich mine will be found in this sett. It is sunk to the 40, and in driving this level west a good ore lode has been passed through. The 30 has, for the last 30 fms., been driven through a soft caving, which it is thought is nearly passed, and good results are expected from the change. A new shaft has been sunk in the centre of the sett which will command several large lodes passed through in the adit level, and when the 30 has been extended west to this shaft, and the lodes intersected at that point, judging from the character of the lodes in the adit, and the prolific nature of the district, good results are reasonably expected.

GREAT HEWAS UNITED MINES.—These mines have greatly increased their returns during the past year. In January last they were much in debt, and upwards of two-thirds of the shares were held by people utterly unable to pay their share of the costs; vigorous measures were taken with them, and 17,000 shares have been relinquished or sold by degrees of the Vice-Warden of the Stannary Court. The shares have been reduced to 15,000, and the mines have greatly improved during the past six months. The prospects for the next year are of that character that, era 1857 goes by, they will figure in the dividend list. The returns for January last were 417*t*. 4*s*. 10*d*., and for December, 1000*t*. 11*s*. 10*d*. The total value of the tin sold for 1854, was 3228*t*. 16*s*. 11*d*., for 1855, 5203*t*. 12*s*. 4*d*., and for 1856, 7890*t*. 7*s*. 9*d*. Total value of the tin sold since the company's operations were commenced, is 18376*t*. 17*s*.

PENDEEN, near Levant, has progressed satisfactorily during the year, and the shaft is now down 12 fms. below the 54, and, instead of cross-cutting, it is intended to sink to the junction of the western lode, which underlies 2 feet in 1 fm.; and the eastern will underlie about 6 in. in 1 fm. This junction is expected to be met with. The last call made will carry on the work for four months.

AT PENDRAN-DREDA large returns of tin have been made during the year, and it is calculated nearly 8000*t*. worth is still in the mine undisposed of. The prospects of the mine are good, and it ought to take a good position this year.

SOUTH CRENVER appears to have sold altogether copper ores to the value of 15,933*t*. 2*s*. 4*d*., and the prospects are good.

HAWKMOOR is selling small quantities of tin and copper, and a good mine is anticipated in depth.

AT WHEAL UNITY CONSOLS rapid progress has been made during the last few months. The new lode cut in the eastern part of the sett is opening out in a favourable manner. The workings upon it comprise an adit driven about 130 fms., a 10 fathom level driven about 80 fathoms, a 19 fathom level driven 50 fathoms, and a 25 fathom level driven about 50 fms., all on the course of the lode, which averages 2 to 3 feet wide. The 10 fm. level has been good tribute ground for the whole distance, and about 900*t*. worth of ore has been sold from this level alone during the last five or six months. The 19 and 30 fathom levels are laying open very rich ore ground, a stone of ore from the 19, now lying at the office, being probably equal to anything ever broken from any lode in Cornwall: 100 tons, the produce of two months (chiefly from the 10 fm. level), are entered for sale at the ticketing on Jan. 8. This quantity will be increased as the 19 and 30 fm. levels are further developed. The adit has been turned south-east (on a counter, which produces occasional stones of rich grey ore), with a view to intersect and cut a south parallel lode, known to be productive of rich ore in an adjoining mine. The mine has funds in hand. It is now drained by a portable engine very inexpensively, and waits only the cutting of the south lode to erect a stationary engine, which need not be of a large power.

NORTH UNITY is progressing favourably, and we hope before another year is past will make a more favourable appearance.

WHEAL MARGARET has sold 240 tons of tin, yielding 15,613*l*., and has divided 3220*t*. The prospects are good for an increase.

WHEAL MARCERY has sold 908 tons 12 cwt. of copper ores, realising 5230*t*. 17*s*. 11*d*., and 2 tons 13 cwt. of tin, 17*s*. 4*s*. 5*d*. The returns are expected to increase, and the mine will probably be in the Dividend List of 1857.

TRELYON CONSOLS has sold 27 tons 13 cwt. of tin, 1869*t*. 2*s*. 3*d*., and copper, realising 14*t*. 36*s*. 7*d*.

SOUTH PROVIDENCE, 3 tons 13 cwt. of tin, yielding 247*t*. 0*s*. 2*d*.

PROVIDENCE MINES have sold 256 tons of tin, realising 19,733*l*., and has divided 10,080*t*., with good prospects for the future.

SPAKER MOOR has sold 42 tons of tin, realising 3109*l*.

WHEAL LOVELL has sold 83 tons of tin, realising 6801*l*. 19*s*. 2*d*., and divided early in this year 430*t*., but has not paid anything of late.

LEVANT has sold 1634 tons of copper ores, realising 8178*t*. 5*s*. 5*d*., and 232 tons of tin, 16,812*t*. 11*s*. 3*d*., whilst the dividends paid have been 1280*t*.

POLBERRO has sold 262 tons of tin, realising 19,911*l*., and has divided BOTALLACK has divided 5500*t*. The copper sold has been 651 tons, yielding 820*t*. 13*s*. The mine has improved, and ought, with present prices for metals to pay larger profits in 1857.

WHEAL TRELVELAN has been selling about 200*t*. worth of tin per month through the year, and a few weeks since Richards's tin lode was intersected, and is opening out a long piece of tin ground for 15 fms. in height. At the Copper Mine, one of the champion lodes of the district, and to reach which a heavy expenditure has been incurred, was cut in the 30 a few months ago, and the lode in the 15 is yielding very rich stones of ore; still in the process. Two pitches are working in the back of this level at 7*s*. in 1*t*., and 9 tons of the ore sold in Dec. for 15*t*. 19*s*. 5*d*. per ton. The shaft has been sunk to the 40, and a cross-cut extended towards the lode 5 fms., and there are 5 fathoms further to drive to intersect it. It is the opinion of the best miners of the district, that it will be met with rich, and, if so, this mine would at once be a paying concern.

THE NEW WHEAL VOR UNITED MINES are to the east of, and in close proximity to, the Great Wheal Vor United Mines, there being a slip of ground between the sets, which in some places is only about 75 fms. in width. The whole of the lodes of the Great Wheal Vor United Mines, including Wheal Metal lode, on which there are at present courses of tin of extraordinary richness, one of them having been lately valued at 300*t*. per fm., and the old main lode, which has yielded more tin than any other lode yet discovered, pass into and throughout the entire length of the New Wheal Vor United Mines. The geological formation of both mines is precisely similar, both being situated in the large basin of Killas rock which fills the hollow formed by the granite hills of Breage on the west, and those of Sithney on the east. The richest deposits of tin ever yet discovered have been found in this basin of Killas,

of which the old mines occupy the western half, and the new ground now about to be worked forms the eastern portion. Immense masses of tin were formerly discovered and extracted from the western part of this ground by the former workers of Wheal Vor, and equal success is now being met with by the spirited proprietors of the same property, showing the district to be unequalled in mineral wealth, as far as tin is concerned. In the New Wheal Vor United Mines, the same lodes which have been, and still are, so productive to the west, traverse a tract of ground of equal, or greater extent, in the same formation of rock, in which, however, they have remained hitherto unexplored. It may be thought strange that the former workers of Wheal Vor neglected to extend their levels into the ground, but this may easily be accounted for, from the circumstance of their having found so much wealth within their own boundary that they were not tempted to explore beyond it; and afterwards, when they had exhausted their first discoveries, or worked them to such an extent that they would no longer yield profits, they were not in a position to open into new ground without refunding some of their past dividends, which they had not the enterprise to do; and the result is that the old mine has passed into the hands of the Great Wheal Vor United Mining Company and the new ground into those of the proprietors of the New Wheal Vor United Mines. The first-named party have already succeeded in raising their property to the head of the productive tin mines of Cornwall, and consequently of the world, and cannot fail, with judicious management and the present price of tin, soon to get it into a highly profitable state. The New Wheal Vor United Mining Company have hitherto confined their operations to the driving of adits and other works, tending to discover the position and character of the various lodes near the surface, as a guide to carrying out a proper system in deeper and more extensive workings. The result of these explorations have been exceedingly flattering, giving every indication that the same lodes which have been so productive to the west will be equally so in the new ground. A steam-engine has, therefore, been purchased, which will at once be erected. The cost of driving is expected to be very easy, as the colossal engines on the old mines to the west will, without doubt, unwater the neighbouring ground, on the same lodes, to a considerable extent. The New Wheal Vor United Mines are divided into 4900 shares, with a paid-up capital of 17,000*l*. M. MILL POOL.—The returns of this mine have not reached us, but the prospects, we understand, are good, and better results are anticipated.

NORTH STAFFORDSHIRE.

DALE LEAD MINE.—In our last year's Review we briefly alluded to this mine as having been recently set to work by a private company of a few gentlemen; it is situated in a limestone district, and its rock is of the carboniferous series. It adjoins the celebrated Eston Mine, and has very similar veins or lodes. The principal of these is a pipe vein, discovered by old workers near the surface, and followed down by a former company many years ago to 26 fathoms deep below an adit level of 26 fms. This "pipe" has always been a strong mineralised vein, and although in the former working no junction of it with a cross lode (or as it is usually called in Derbyshire and Staffordshire "rake vein") was discovered, it yet yielded a considerable quantity of lead ore. The present company have erected a 19-inch steam-engine (condensing), and had the water in fork early in November, 1855. In January last they began selling lead ore, and up to this date have returned 98 tons realising upwards of 1180*t*. This, as the produce of a mine the first year after it has been unwatered, and during which period a vast quantity of dead work has been done, which to some extent has hindered progress, is certainly most satisfactory. The prospects at the present time are most favourable,—in fact, a rake vein has been discovered which intersects the pipe vein below the 26, and which at the 33 has produced effects of the most important character; the pipe vein in this level is of greatly increased size and value. The agent reports (Nov. 19) the pipe to be worth 50*t*. per fm. No. 3 vein, the rake vein, has also yielded some excellent ore, besides having considerably added to the prospects and value of the mine. There are other cross lodes in the mine which will intersect the pipe vein below the present bottom level, and whenever these points of intersection are reached results of the most important character are reasonably to be expected to be met with. The agent reports the mine to be about paying costs at this time. One very important feature to the economical working of the mine remains to be noticed—viz., that there is a sufficient stream of water belonging to the sett for working a water-wheel of 35 feet diameter and 6 feet breast: on the value of this we need make no comment. We have only to add the company intend erecting a wheel of the size named in the coming spring.

MIXON COPPER MINES.—During the year a valuable discovery has been made here, consisting of four parallel saddles, having the same bearing as the saddle lode, intersecting these saddles, has also been discovered. The most eastern of these four saddles, called No. 1, has been opened on at surface, and is found to contain a nice vein of carbonate of copper ore, sulphuret of lead, carbonate of lime, fluor-spar, &c., and is, in fact, a most kindly lode. In the old part of the mine the workings have been prosecuted vigorously, and in the sump-winze now being sunk below the 83 there is an excellent lode 6 ft. wide. The prospects of this mine are considered good; and the agents are of opinion that a little further perseverance will lead to good results.

THE PARK MINE, south of Miniver, has been at work many years, but not with the vigour required to ensure success, until within the past 12 or 18 months. The mine is now making regular returns, and confident hope are entertained that during the coming year large profits will be realised. It is in 128 shares, price 90*t*. 10*s*. 1*d*., in very few hands, some of the Flintshire smelters being the chief holders.

SOUTH MINIVER, south of the Park, is in virgin ground; but, judging from the anxiety of parties to get the ground, it must be thought very highly of in 128 shares; chiefly held by some of the Flintshire smelters.

CARDIGANSHIRE yielded 7043 tons lead ore, and 5014 tons of lead: the Lisburne Mines yielding 2418 tons of ore, and 2150 ozs. of silver; Cwmystwyth, 1880 tons of ore; Cwm Erisin, 247 tons, and 3420 ozs. of silver; East Darren, 535 tons, and 7040 ozs. silver. In mines in Cardiganshire which have paid this year, the Lisburne have divided 8000*t*. profit; East Darren, 3000*t*. profit; Cwmystwyth, 2560*t*. profit.

AT CWM SENON the new pumping-wheel has been set to work, and the mine brought into a satisfactory working condition. The water is drained to nearly the 40, and this operation is progressing much faster than anticipated. In the 19, good branches of lead ore are found. In the 20 west the great deal of ore has been worked away, but in the 20 east the lode has been missed, and is consequently standing whole on one side of the level. It is expected that the mine will be brought into a profitable state in 1857. The ore ground standing in the mine is valued at 300*t*., while the bottom level (the 60) has passed through 60 fms. of productive ground, and two winzes from the 50 to the 60 are said to be worth 1 ton and 1*s* per fm. The ore is very rich for silver. Cwm Nebo adjoins the celebrated East Darren Mine, which has made immense returns, and is now yielding a profit of 400*t*. to 500*t*. per month.

WILLOW BANK is being worked with spirit and economy. An important addition has lately been made to the sett. The 17, west from eastern shaft, is producing good lead ore, the lode is very large, and is considered one of the finest in Cardiganshire.

BRONFLOYD (LIMITED).—The quiet perseverance of this sett by the adventurers was little noticed until the autumn, when the alteration in its constitution was resolved upon, and its affairs placed under the Joint-Stock Companies Act, 1856. Previous to this period the mine was in 4000 shares, upon which 22*s*. had been called up, or 440*t*. In August the share capital was remodelled, and the 4000 shares were reduced to 2000 of 4*t*. each, with limited liability: 1000 of these are deemed paid-up, thus absorbing 4000*t*. of the paid-up capital, while the remaining 1000 are credited the balance of the capital (400*t*.); and upon these shares a call of 6*s*. per share was then made, making 1*t*. paid. We state these circumstances as the present position of the company renders an explanation necessary. It was one of the first to embrace the provisions of the new Act, and which fact, coupled with a considerable improvement in the mine, has caused the share to be in demand; the present price being 5*s*. to 5*t*. for the paid-up shares, and about 1*s* for the

MINING AND IRONWORKING IN PRUSSIA.—No. V.
[FROM OUR OWN CORRESPONDENT.]

Having in my previous communications fully shown the very enviable position mining occupies in Prussia, the question naturally presenting itself is—What is the cause of this wonderful change in the state of affairs? The evident cause of the improvement is the repeal of the old mining laws, which varied in every part of Prussia, and the introduction of the new law of May 12, 1851, which governs the whole kingdom with the exception of the land on the left bank of the Rhine. The principal features in the new law are—

1. The reduction of the Government duty called the Zehnte, from one-tenth of the tax, on the minerals raised, to one-twentieth, giving the miner the privilege of compounding for a certain sum per annum, or for a fixed sum down. Certain mines, as coal mines consuming their own produce in mining operations, do not pay this duty. The duty upon coal brought into the market is about 3*1/2*d. per English ton, and upon ironstone 1*1/2*d. to 2*1/2*d. per English ton.

2. The reduction of the Government duty, called the Recess-Geld, for the control of mines (which in many provinces amounted to 60 thalers for a single concession of 500 fms. square, whether worked or not) to 1 thaler, about 3*1/2*d. per annum.

3. The total repeal of all other Government duties and taxes on mines, which being 24 in number, were very burdensome and vexations to the miners generally.

4. The emancipation of mining corporations from all Government control, with the exception [for public interest and safety] of a tax of 1 per cent. on the value of the raw produce.

5. The introduction of arbitration in all disputes between members of mining corporations, their representatives, constituents, &c., without the interference of law.

6. The maintaining of the right of the first discoverer (*Erste Finder*) of minerals, as the sole owner and proprietor of the minerals discovered by him.

Since "old grey times," and even according to the old German law, the rights of the "*erste finder*" was acknowledged, as all mineral wealth belonged to the Crown of the several German states, and not to the landlord of the surface estates, and where the Crown did not work the minerals mining was open to equal competition for all parties; but often the Crown made restriction for its own purposes, and gave but small sets to the discoverer, so that the mineral fields were not extensive enough for the proprietor to supply one small blast-furnace; he had, therefore, to sell what ironstone he raised to a neighbouring blast-furnace purchasing its raw material, and these blast-furnace corporations frequently consisted of hundreds of individuals, each party purchasing their own charcoal and ironstone, smelting certain days in the year, and selling the produce on their own account.

For some short time before the new law was made mineral fields of greater extent (500 fms. square) were granted, but the owner could derive no great advantage from it unless he could work the mineral immediately, as he had to pay the 60 thalers, Recess-Geld, alluded to above for every field, so that he was often but too glad to give up his property altogether, as when the duty was paid one field was not enough to risk the erection of a blast-furnace, and so no fair chance was given to the miner. But the new law of May, 1851, placed the discoverer of mineral in an entirely different position, enabling him for the same amount of duty to hold 60 concessions in his own hands, and by acquiring a *complexe* of fields according to his means to prepare for extensive mining operations, and the erection of blast-furnaces to bring the produce into a marketable state.

The more extended introduction of coke as a fuel also offered greater facilities for successful working of blast-furnace corporations, charcoal furnaces depending entirely on the produce of wood from a large district, and ruining the adventurers if the supply fail. By the Prussian mining law, every security is offered to legitimate enterprise, since, by the right of the "*erste finder*," it is well known that mineral has really been discovered, and the extent of the discovery; for no one can possess any mineral property until the Government officers have reported its existence and extent. An abstract of this portion of the law will give a better idea of its value:

1. The Government grants licenses (*schriftscheine*) to seek minerals to anyone, admitting to every landed property (provided no mutzung or concession for mining has already been granted), and extending over a searching district of about 500 fathoms square; many *schriftscheine* being valid on the same property, so as to cause competition in searching for minerals.

2. The individual who first discovers mineral in the outerop, or by sinking shafts, driving levels, boring, &c., in that allotment, is the "*erste finder*," and gives notice at the Government mining office, and asks for a mutzscheln, or protection certificate of his right to the discovery, stating where and what mineral is discovered. The Government appoints a day when the mine and mineral will be examined by its sworn mining officers, as to locality, site, and thickness of the seam or deposit, dip, top and foot-wall, &c.; these officers must break fair specimens from the lode with their own hands, in order that the official chemist may ascertain the percentage. When no mineral is visible the mutzung is lost; or if the top and foot walls of the seams or lodes are not clearly visible, so that a sure judgment may be formed, the Government appoints a second *terminus*, giving the mather further time to lay open the seam more, or lose his rights, and orders the shafts, levels, &c., to be sunk or driven further, until the percentage of the lode is found rich enough to render the mine workable; it must also be proved to the Government officials that there is a sufficient extent to work. During all these operations the mutzscheln is given by the Government.

3. After all this is settled, the Government grants a complete concession (*beleihung*), in the name of the mather of the mining property he has thus acquired; and the re-situs authority to work the mine is given by the Minister of Trade and Mining, stating the description and extent of the mineral, as above, and a plan showing the situation and boundaries of the property, and the points where the mineral has been discovered. The Mining Court also gives a hypothetical document that this mining property is duly registered in the name of the proprietor.

In every stage of these proceedings the holder of the warrants can sell or cede his rights (obtained by *schriftschein*, mutzung, or beleihung) to other parties, and several may join together to seek mineral in the same way, and become partners with the half, third, fourth, &c., part of the whole. Each single mine or blast-furnace is, when no joint-stock company is formed, divided into 128 kuxen (stock shares); each kuxe can be divided into $\frac{1}{128}$, $\frac{1}{64}$, or greater number of parts, according to the number to partake of each kuxe; and the hypothecary office gives each individual a certificate showing how many kuxen or part of a kuxe they hold as their property of the whole mine or estate. The proprietor of a mine or blast-furnace, holding the whole 128 kuxen in his own hands, can manage the works himself or by deputy; and when there is more than one partner they can appoint a manager from among their number or not, and with or without a council of management, nominated from among the shareholders; thus the business can be placed in the hands of one or several persons. The manager (either alone or under the orders of the council of management) is wholly independent of the Government, which, however, gives counsel in difficult matters if requested to do so. The Government Mining Office also gives advice and assistance when difficulties or differences arise with the proprietors of the surface, whether in searching for minerals or in mining operations; and when amicable arrangements cannot be made for damages already done, or as to the amount of purchase money to be paid for the ground necessary to carry on mining operations, making roads, &c., appoints arbitrators from among its officers to settle the matter by an equitable arrangement between the parties without any appeal to the courts of law. Should there be further resistance on the part of the surface proprietor against mining operations being carried on main force is applied by the Government officials to enforce the miner's right. No fee, beyond the purchase money for the ground and recompense for damage done, is payable to the surface proprietor, nor is there any rent on the mineral raised. No requisition can be made by second parties demanding security for anticipated or imaginary damages, as the Government consider that, where a beleihung is given, the mining property is sufficient to meet any claim—the mine alone is answerable, and not the miner—for damages done by mining.

No manager or member of the council of management is answerable, with person nor property, for any claim for any outlay or debts contracted for the benefit of a mine, the claim being on the mine only; and even if the property has been publicly sold, and there is not sufficient realised to pay the debts, the partner is alone answerable to the extent of the capital paid up at that time, and that amount only can be lost.

Again, in order to show the course pursued by the Government mining officers to ascertain for themselves all requisite particulars before the concession and the right to work a mine is given, and the reliance which may be placed in the statements made, and also to show the great quantities of ironstone recently discovered in Prussia, I subjoin an extract from the contract of the recently established New Scotland Mining and Iron-working Company, in Westphalia, showing the mineral fields and single concessions, for the transfer of the lease of which (the property having previously passed out of the hands of the first proprietor) the New Scotland Company paid 500,000 thalers, or about 75,000*l.*, agreeing likewise to reimburse the transactors for all outlay and interest from the time of their taking the lease, and to undertake the payment of the fixed rent on the output of minerals to the original proprietor. However, the great richness of the mineral fields in question, and the low rent laid down upon them by hypothecary inscription, fully justified the New Scotland Company in giving that amount of premium:

When the searching for blackband, or British coal ironstone, first took place some years ago, Mr. C. Harkort, in particular, was fortunate enough to find in the stratification of this part the most splendid deposits, equal to the best British black-

band seams, and the first mining authorities soon gave their verdict in favour of the great importance of the discovery. Mr. Harkort zealously pursued the explorations of these stratifications, and thus formed and acquired by him this aggregation of deposits, the length of which, from Schlebusch, near Wetter, to Horath, is about 3 hours, (13 English miles) and the width, from Hasslinghausen to near Hattingen, about 2 hours (9 English miles).

The section shows that the stratifications here form 7 basins or 6 saddles, consequently, 14 different wings, and that, in each of these wings, there are, as far as is known at present, at least 3 ironstone seams of from 20 to 90 in. thickness. (N.B. 12 in. equal to 12*1/2* in. English). The official analysis of the ironstone near the surface gave 30 to 40 per cent. of pure iron, which occurs in it as a sesqui-carbonate; whereas hitherto the ironstone raised has yielded about 40 to 60 per cent. in a state of calcination.

The ironstone is kindly in nature, easily convertible into a flux, containing manganese superabundantly. It is ascertained to yield a good raw material for rails and bars. The proximity of this ironstone to the description of coal best adapted for making superior coke, insures, if the operations be carried on properly, such returns for the capital employed in the working on a large scale, as have only been obtained, to our knowledge, in England and Scotland.

If we enter more into detailed particulars as to the richness of these deposits, we must first of all observe, that the calculation of the yield of iron is based on that of the ironstone actually obtained from the mines, and an official and indisputable deposit; since there is attached to each deposit a commissary of the mining offices, whose reports are made from his actual evidence on the depth, the spreading, inclination, and percentage of the discovered seam. The following are the results according to these official documents:

Current No.	Name of Ironstone field.	Thickness of seams, from offic. statut.	Length of Ironstone fields. (ft. 6 in.)	Width of Ironstone fields. (ft. 6 in.)	Therefore, square inches.	Scheffels (200 lbs.) per sq. inch.	Total scheffels.
1	Neu Herzkamp.	45	545	265	144,425	112 <i>1/2</i>	16,247,812
2	Ditto, III.	36	520	220	114,400	90	10,296,000
3	Ditto, V.	30	518	160	82,880	75	6,216,000
4	Ditto, VI.	9	510	170	86,700	22 <i>1/2</i>	1,950,750
	a. Top seam	47	510	360	183,600	117 <i>1/2</i>	21,573,000
	b. Middle seam	5	510	363	183,600	37 <i>1/2</i>	6,885,000
	c. Lower seam	12	512	80	43,540	30	1,315,200
	Ditto, VII.	15	534	140	46,760	37 <i>1/2</i>	1,752,000
	Ditto, IX.	20	524	218	114,432	50	5,711,600
	Ditto, X.	18	468	349	159,120	45	7,160,000
	Hasslinghausen.	35	458	140	64,126	90	5,770,800
10	Ditto, IV.	12	410	163	66,830	30	2,004,900
11	Neu Hiddingshausen.	36	400	30	12,000	90	1,080,000
	Lower seam	15	350	43	14,000	40	600,000
12	Hiddingshausen II.	36	400	30	12,000	90	1,080,000
	Lower seam	16	350	40	14,000	40	600,000
13	Kennebaum II.	36	200	45	9,000	90	810,000
	Laing seam	16	250	40	10,000	40	400,000
14	Herzkamp XL.	15	378	340	128,520	37 <i>1/2</i>	4,819,500
15	Ditto, XII.	7	635	320	203,200	17 <i>1/2</i>	3,556,000
	Top seam	36	270	15	4,050	90	364,500
	Lower seam	15	600	250	150,000	18	2,700,000
27	Ditto, III.	5 <i>1/2</i>	580	250	145,000	14	2,030,000
28	Wilhelm.	12	700	2.0	140,000	30	4,280,000
29	Nieder Stüter III.	12	500	300	150,000	30	4,500,000
30	Nieder Stüter II.	12	233	300	84,900	30	2,547,000
31	Ober Stüter.	34	419	180	80,820	85	6,860,700
32	Holthausen I.	12	400	300	120,000	30	3,600,000
33	Büdcher.	4	360	450	162,000	10	1,620,000
34	Gneisenau.	4	360	450	162,000	10	1,620,000
35	Holthausen II.	24	375	600	225,000	60	13,500,000
	Lower seam	11	375	1090	375,000	27 <i>1/2</i>	10,312,500
36	Holthausen IV.	12	450	150	69,000	30	2,070,000
	Lower seam	32	460	150	69,000	80	5,520,000
37	Holthausen VII.	14	310	250	77,500	35	2,712,500
38	Am Winkel.	15	589	240	141,360	37 <i>1/2</i>	6,301,000
39	Schindhausen.	48 <i>1/2</i>	720	230	165,600	120	19,872,000
40	Esborn I.	18	750	200	150,000	45	6,750,000
41	Ditto, II.	10	410	200	82,000	25	2,050,000
42	Herbede II.	13	230	200	50,000	32	1,600,000
43	Bommern I.	17	500	470	235,060	42	9,870,000
44	Holthausen V.	49	820	120	93,400	122	12,004,500
	Total,						416,466,962

15. Hörde II.; 46. Haus Rothenhöfe II.; 47. Harkorten II.; 48. Pöten; 49. Gross Barop. The Consolidation New Stockton with the mineral fields—50. Stockum; 51. Eicklinghofen; 52. Eicklinghofen II.; 53. Eicklinghofen III.; 54. Station Barop; lastly, 55. Wetter; 56. Einzug in Paris 6*1/2* Kux; 57. Magnus, 42*1/2* Kux; 59. The "Mutzung" Herzkamp XIV.; and 59. The "Mutzung" Herzkamp XV.

The omission of the calculation for the last mentioned fields, Nos. 45-59 is intentional, in order to avoid the possibility of an inaccuracy, it not having as yet been laid open sufficiently to make an exact calculation, although there can be no question as to their great value. The calcined ironstone, hitherto obtained from them, has yielded 40 to 60 per cent. of metal in the average.

This calculation of a quantity of ironstone, of 416 millions of scheffels (one scheffel about 200 pounds in weight), the correctness of which is indisputable, was undertaken before ever the working of the deposit had commenced. At this present moment when the Herzkamp and Sprockhövel parts are laid open by shafts, in some instances to a depth of 350 ft., the ironstone seam invariably turns out of a better quality and larger quantity than at first; and, to give an instance, the deposits, No. 1 to 19 inclusive, would yield 216 millions instead of 182 millions of scheffels, according to the first calculation.

The same proportion of increase may be relied on in the deposits commencing with No. 20, and is already ascertained in the Stüter and Holthausen deposits, by actually opening up the ground, the more so as in most of them the originally found seam only had been taken as the basis of calculation; it may, therefore, be safely assumed, that the total amount of ironstone in all the mineral fields will be 500 millions of scheffels,